

SHORT COMMUNICATION

***Hibiscus campanulatus* (Malvaceae), a new and rare species from the Pilbara bioregion, Western Australia**

Hibiscus campanulatus A.J.Perkins, *sp. nov.*

Type: north-east of Paraburdoo, Western Australia [precise locality withheld for conservation reasons], 24 November 2012, *S. Reiffer s.n. (holo:* PERTH 08461228; *iso:* CANB).

Hibiscus sp. Canga (P.J.H. Hurter & J. Naaykens 11013), Western Australian Herbarium, in *FloraBase*, <https://florabase.dpaw.wa.gov.au/> [accessed 30 September 2016].

Woody *shrub* 1.8–3.0 m tall. *Branchlets* densely covered with fine, white to cream to pale rusty brown stellate hairs 0.4–1.5 mm long, which are sparsely interspersed with simple hairs 0.4–0.5 mm long; hairs often covered with small droplets of resin. *Stipules* more or less persistent, 10–20 mm long, green when young turning brown with age. *Leaves* simple, villous with mostly stellate resinous hairs sparsely interspersed with simple hairs, distinctly petiolate; petiole terete, indistinctly grooved to striate, 15–45 mm long; lamina deltoid to ovate, 30–90 mm long, 30–80 mm wide; base shallow to distinctly cordate; margin serrate to biserrate; apex acute, the adaxial surface slightly darker green than abaxial surface; veins ending at the margin, tertiary venation slightly sunken on adaxial surface, lateral and secondary venation more prominent and raised on abaxial surface. *Flowers* solitary in leaf axils, chasmogamous, functionally monoecious; pedicels 15–55 mm long, with an articulation 10–15 mm from the base of the calyx, indumentum similar to that of the young stems and petioles. *Epicalyx* 6–8-segmented, 7.5–12.0 mm long, 4–6 mm wide, segments lanceolate to elliptic, acute to obtuse, free or connate near the base, shorter than the calyx, spreading to recurved; midvein distinct on abaxial surface, raised. *Calyx* at anthesis 25–40 mm long, 4–7 mm wide, venation distinct on abaxial surface, raised, 1–3-nerved, densely covered with stellate hairs and sparsely interspersed with simple hairs, adaxial surface densely covered with simple hairs only. *Corolla* campanulate with 5 free petals, petals obdeltoid, 35–42 mm long, 15–22 mm wide, white through to pale lilac, basal petal spot absent. *Staminal column* 22–26 mm long with the stamens distributed along the distal 15–19 mm of the column; staminal filaments 1.5–3.0 mm long; anthers pink; pollen yellow. *Style* exerted 3–6 mm beyond the apex of the staminal column; style branches 5, 2–4 mm long; stigmas capitate, 0.8–1.2 mm across, stigmatic hairs 0.1–0.4 mm long. *Ovary* sparsely covered with simple hairs at anthesis. *Fruit* a capsule, hairy, 11–13 mm long. *Seed* 3.5–4.0 mm long, 1.8–2.2 mm wide, reniform, densely covered with white simple hairs. (Figure 1)

Diagnostic features. *Hibiscus campanulatus* is distinguished from all other members of the genus by the following combination of characters: woody shrub to 3 m high, indumentum of resinous stellate hairs and simple glandular hairs covering all parts except corolla, deltoid to ovate leaves with cordate bases and serrate to biserrate margins, flowers solitary in leaf axils, epicalyx lobes lanceolate to elliptic in shape and distinctly spreading to recurved, calyx with raised venation distinct on abaxial surface (1–3-nerved), adaxial surface of calyx only covered with simple hairs, corolla campanulate and with 5 free, obdeltoid petals that are white through to pale lilac but lacking a basal petal spot.



Figure 1. *Hibiscus campanulatus*. A – flowering plant *in situ* showing an axillary, pale pink flower with campanulate corolla, B – flowering plant *in situ* with a white, campanulate flower, C – flower in bud showing distinct calyx with shorter, recurved epicalyx lobes, D – fruit dehiscent with some mature black-coloured seeds. Images by A. Perkins.

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 4 May 2014, S.A. Dalgleish ELA 41 (PERTH); 23 May 2011, P. Hoffman BES 00472 (PERTH); 17 Aug. 2011, P.J.H. Hurter & J. Naaykens 11013 & 11014 (PERTH); 20 Apr. 2012, B. Morgan BMor 1343 (PERTH); 31 May 2014, J. Naaykens JN 14-8-J151 (PERTH); 31 May 2014, J. Naaykens JN 14-8-(H50-3) (PERTH); 17 July 2014, J. Naaykens JN 14-8-J420 (PERTH); 17 July 2014, J. Naaykens

JN 14-8-J429 (PERTH); 16 Aug. 2014, *J. Naaykens* JN 14-8-J364 (PERTH); 17 Aug. 2014, *J. Naaykens* JN 14-8-J388 (PERTH); 17 Aug. 2014, *J. Naaykens* JN 14-8-J430 (PERTH); 23 Mar. 2012, *S. Reiffer* SRe 111 (PERTH); 27 May 2015, *S. Reiffer* SRe C-020 (PERTH).

Phenology. Plants predominantly flowering and fruiting from March to November but may sporadically flower over the summer months in response to localised rainfall events.

Distribution and habitat. This species is restricted to the Hamersley subregion of the Pilbara bioregion in Western Australia (Western Australian Herbarium 1998–), where it is known from the southern central Hamersley Range near Paraburdoo (Figure 2). Plants grow within incised ironstone gullies, protected areas below cliffs, rocky creeklines and below breakaways, often with underlying loamy to skeletal ironstone soils.

Conservation status. *Hibiscus campanulatus* is listed by Smith (2017) as Priority One under Department of Parks and Wildlife Conservation Codes for Western Australian Flora, under the name *Hibiscus* sp. Canga (P.J.H. Hurter & J. Naaykens 11013).

Etymology. The epithet is Latin for bell-shaped and refers to the flowers, which have overlapping petals that are often reflexed at their tips.

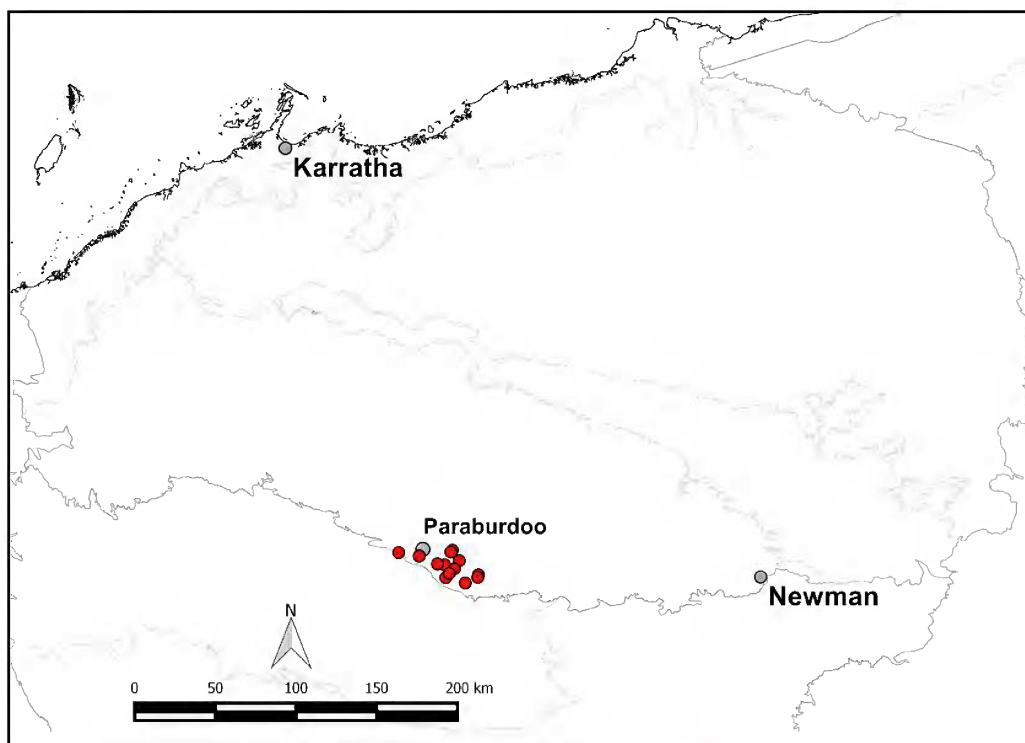


Figure 2. Distribution of *Hibiscus campanulatus* based on specimens held at PERTH (●). Map centred on the Pilbara bioregion, Western Australia, with *Interim Biogeographic Regionalisation for Australia version 7* bioregions (Department of the Environment 2013) shown in darker grey and subregions in light grey.

Affinities. *Hibiscus campanulatus* is most similar to *H. haynaldii* F.Muell. based on vegetative and floral morphology. Ferdinand von Mueller described *H. haynaldii* based on material collected by John Forrest from ‘the sources the Menilyalya’ (Minilya River) ‘towards Sharks-Bay’ (Mueller 1883).

Hibiscus campanulatus differs from *H. haynaldii* by having a much sparser indumentum on all parts of the plants. This makes the surfaces of mature leaf laminae, epicalyx lobes and calyces clearly visible through the indumentum on plants of *H. campanulatus* (whereas these surfaces are completely covered by hairs in *H. haynaldii*). This sparser indumentum in *H. campanulatus* also makes the raised nerves on the abaxial surfaces of the epicalyx lobes and calyces clearly visible (Figure 1C, D). *Hibiscus campanulatus* also differs from *H. haynaldii* by having distinctly spreading to recurved epicalyx lobes (ascending epicalyx in *H. haynaldii*), distinctly campanulate flowers (Figure 1A, B; funnel-shaped in *H. haynaldii*) and concolorous petals (petals have a dark basal spot in *H. haynaldii*).

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Andrew J. Perkins

Western Australian Herbarium, Department of Parks and Wildlife,
Locked Bag 104, Bentley Delivery Centre, Western Australia 6983
Email: aperkins@hotmail.com.au